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ABSTRACT

This report summarizes the characteristics and opinions of instructors participating in the National Science Foundation's community college field test of PLATO IV, a computer-based teaching system developed at the University of Illinois. The report is based on instructor's responses to a questionnaire distributed to 106 PLATO IV users in five subject areas. The following data are examined: (1) general characteristics of the instructors who used PLATO IV, including subject area taught, whether they held tenure, and average number of years of teaching experience; (2) the extent of their experience with PLATO IV, including the number of students whom they exposed to PLATO IV, and the average number of hours of exposure of each; (3) the ratings that the instructors gave to lesson difficulty and quality for each of the subject areas; (4) the effect of instructor training courses on actual teaching with PLATO IV, as measured by the extent to which instructors reviewed lessons prior to student use; (5) general attitudes toward PLATO IV, as inferred from interview data. Data in this report indicate that instructors are generally quite positive in their attitudes toward PLATO IV and toward the materials available through this medium. Specific survey results are displayed in table form. (NHM)

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PLATO Evaluation Report -- Summary of Community College Usage for Fall 1975

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April 19, 1976

The data in the Community College Users' Report for Fall 1975 have been examined with a view to summarizing (1) general characteristics of the instructors who used PLATO, (2) the extent of their experience with PLATO, (3) their ratings of the instructional material, (4) the effect of the users' courses on their approach to use of PLATO, and (5) their general attitudes toward PLATO.

Experience in teaching

A total of 106 instructors used PLATO materials in five subject areas: accountancy, 9 instructors; biology, 21; chemistry, 22; English, 39; and mathematics, 15. Of 102 instructors who responded to a question about tenure, 67.7% indicated that they held tenure. The average number of years of teaching for the 101 instructors who responded was 10.4 years. Based on these data, the majority of the instructors involved appear to have been highly experienced teachers. Hence, it would be expected that they would be able to evaluate realistically the impact of current implementations of PLATO on Community Colleges.

Experience with PLATO

A total of 4345 students used PLATO for a total of 20,386 hours, giving a mean of 4.69 hours per student. Table 1. gives the break-down of usage by subject area.

Table 1. Hours of use by students in each subject

	number of students	number of hours	hours per student
Accountancy	607	3039	5.00
Biology	1064	5313	4.99
Chemistry	654	4813	7.36
English	1499	5433	3.62
Mathematics	521	1788	3.43

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There may be some question of the degree of impact on learning that this rather limited exposure to PLATO would have on individual students, in particular if the time was distributed over several topics. Nevertheless, it seems likely that the total exposure provided a basis for reliable opinions on the part of instructors.

For the 102 instructors for whom tenure information is available, students of the 69 tenured instructors averaged 5.4 hours on PLATO, while students for the 33 non-tenured instructors were exposed for about 4.1 hours each. Tenured instructors thus made slightly greater use of PLATO (t_{100}=2.171, p=0.032, 4.5% of sample variance accounted for by this effect).

Ratings of instructional material

Tables 2. and 3. summarize the ratings of lesson difficulty and lesson quality for each of the subject areas. In order to give conservative results, when a lesson rating was given between those indicated on the questionnaire (e.g., average to high), the lower category was assumed. Similarly, when such split classifications were applied to lesson difficulty (e.g., appropriate to difficult), the more extreme category was taken.

Table 2. Distribution of instructor ratings of lesson difficulty

	too difficult (1)	difficult (2)	appropriate (3)	easy (4)	too easy (5)	totals
Accountancy	0	0	8	0	0	8
Biology	0	1	14	2	0	17
Chemistry	0	0	21	0	0	21
English	0	1	28	1	1	31
Mathematics	0	1	14	0	0	15
Totals	0	3	85	3	1	92
Percent (based on 92 respondents)	0%	3.3%	92.4%	3.3%	1.1%	

The majority of instructors reported that the material was at a suitable level for their students.

Table 3. Distribution of instructor ratings of lesson quality

	very high (1)	high (2)	average (3)	low (4)	very low (5)	totals
Accountancy	0	5	3	0	0	8
Biology	1	7	11	0	0	19
Chemistry	1	13	6	1	0	21
English	4	18	10	0	0	32
Mathematics	1	7	5	1	0	14
Totals	7	50	35	2	0	94
Percent (based on 94 respondents)	7.4%	53.2%	37.2%	2.1%	0%	

Of the 94 instructors who responded to the question on lesson quality, 36 had themselves been involved in lesson production, while 53 had not written or designed lessons (five did not respond to the question on lesson production). On a five-point scale with 1 for "very high" and 5 for "very low," instructors who had produced lesson material gave an average rating of 2.25, while those who had not written lessons gave an average rating of 2.40. The instructors who had written PLATO lessons showed no significant bias in their rating despite their involvement (t_{87}=1.032, p=0.305, 1.2% of sample variance accounted for).

Effect of users' courses

Implementation of a new technology generally requires some modification in traditional approaches to assure most effective use. A series of "users' courses" was conducted for instructors in the Chicago area to facilitate such effective implementation. No performance measures for classes using PLATO are included in the Fall Users' Report, so an ultimate indication of the impact of the users' courses is not possible. However, the questionnaire did include an item asking about the extent of review of lessons prior to student use. Since the importance of instructor review of assigned lessons is emphasized in users' courses, reports of the amount of review performed could be considered to indicate the effectiveness of the courses. While the accuracy of these reports cannot be easily verified, they constitute, at the very least, a measure of possible attitude change.

Ninety-three instructors responded to both a question on enrollment in an extension course for users and on percentage of lessons reviewed before use by their classes. However, only 75 instructors probably had easy access

to the extension courses; i.e., they lived in the Chicago area. Of these 75 instructors, 27 took at least one extension course. These instructors reported a strong tendency to review lessons before approving them for class use. They reviewed an average of 78.9% of the appropriate lessons, while the group which had not taken any extension course reviewed an average of 47.7% (t_{73}=4.030, p=0.0001, 18.2% of sample variance accounted for).

General attitudes toward PLATO

Overall attitudes were difficult to measure since no specific item on this point was included on the questionnaire. For the 71 instructors who had been interviewed, attitudes were inferred from the interview data. The following rating scheme was used: clearly negative: 1; generally negative with some comment about good features of PLATO: 2; neutral (neither positive nor negative): 3; neutral with some comments about good features: 4; clearly positive: 5. Table 4. summarizes the attitudes by subject area.

Table 4. Distribution of instructor attitudes toward PLATO

	negative (1)	negative to neutral (2)	neutral (3)	neutral to positive (4)	positive (5)	totals
Accountancy	0	2	1	4	1	8
Biology	0	0	4	9	4	17
Chemistry	0	1	2	8	5	16
English	2	0	12	3	7	24
Mathematics	1	1	3	1	0	6
Totals	3	4	22	25	17	71
Percent (based on 71 respondents)	4.2%	5.6%	31.0%	35.2%	23.9%	

At least two of the three instructors expressing negative attitudes were first-time users of PLATO. (The third instructor did not indicate PLATO experience.) However, the overall attitudes of first-time users as a whole did not differ significantly from those of more experienced users. Of the 69 instructors who answered the question on previous PLATO experience and who had also been interviewed, 14 were first-time users and 55 were experienced users. These groups showed no significant difference in attitude (t_{67}=1.372, p=0.175, 2.7% of sample variance accounted for). Thus, it appears

that the generally positive view of instructors is not simply a result of self-selection after the first use.

Two other indicators of attitude are: desire to use PLATO for several semesters and willingness to improve PLATO lessons. Of the 102 instructors who gave information on PLATO experience, 79 or 77.5% had used PLATO previously. Of the 95 instructors who answered the question on producing or improving lessons, 62 or 65.3% indicated that they would like to participate in improving PLATO instruction.

Conclusions

Based on data reported in the Fall 1975 Community College Users' Report, it appears that the instructors are generally quite positive in their attitudes toward PLATO and toward the materials available through this medium. The amount of PLATO use and the backgrounds of the instructors involved suggest that these attitudes are probably quite reliable and based on realistic standards.

Unfortunately, direct performance measures (made by the external evaluator) are not reported, so overall effectiveness of the implementation cannot be inferred here. Nevertheless, continued use of the medium by experienced instructors suggests that this independent group is satisfied with the current or potential value of PLATO to their students and institution.

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